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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,439	03/23/2004	Noritaka Takahata	VX042605	1796
21369	7590	04/26/2007		
POSZ LAW GROUP, PLC 12040 SOUTH LAKES DR. SUITE 101 RESTON, VA 20191			EXAMINER ROE, JESSEE RANDALL	
			ART UNIT	PAPER NUMBER
			1742	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/806,439	Applicant(s) TAKAHATA ET AL.	
	Examiner Jessee Roe	Art Unit 1742	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 2 and 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Status***

Claims 1-8 are currently under examination wherein claim 1 is amended.

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 February 2007 has been entered.

### ***Status of Previous Rejections***

The previous rejection of claims 1-4 under 35 U.S.C. 102(b) as being anticipated by Harris et al. (US 2002/016263) is withdrawn in view of the Applicant's amendment to the claims. The previous rejection of claims 5-8 under 35 U.S.C. 103(a) as being unpatentable over Harris et al. (US 2002/016263) and further in view of the admitted prior art (see lines 16-20 in the background section of the specification of the instant application) is withdrawn in view of the Applicant's amendment to the claims.

***Claim Objections***

Claims 2 and 4 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The language "consisting of" would not allow for the alloy to have elements added as done in claims 2 and 4.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meetham et al. (US 4,459,160).

In regards to claims 1-4, Meetham et al. ('160) disclose a nickel-based heat resistant alloy. A comparison of the alloy disclosed by Meetham et al. ('160) in with that of the instant invention is shown in the table on the following page.

In regards to the claim language, the phrase "up to" indicates that the presence of that particular element would be optional. In this case silicon, manganese, cobalt, and titanium would all be optional elements according to claim 1.

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<b>Element</b>	<b>From Instant Claims (weight percent)</b>	<b>Meetham et al. ('542) (weight percent)</b>	<b>Overlapping range (weight percent)</b>
C	0.02-0.50	0.015-0.05	0.02-0.05
Si	0-1.0	0	0
Mn	0-1.0	0	0
Cr	5.9-10.0	7-13	7-10
Al	2.0-8.0	4.5-6.7	4.5-6.7
Co	0-15.0	0-15.0	0-15.0
W	8.0-16.0	3.0-12.0	8.0-12.0
Ta	0-5.0	2.0-8.0	2.0-5.0
Ti	0-3.0	1.25-3.0	1.25-3.0
Zr	0.001-0.200	0-0.05	0.001-0.05
B	0.005-0.300	0-0.01	0.005-0.01
Ni	balance	balance	balance

The Examiner notes that the composition of the nickel-based alloy of Meetham et al. ('542) overlaps the composition of the instant invention, which would be a prima facie case of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the desired amounts of carbon, chromium, aluminum, cobalt, tungsten, tantalum, titanium, zirconium, and boron from that of Meetham et al. ('542) because Meetham et al. ('542) disclose the same utility (heat resistant nickel-based alloys) throughout the disclosed ranges.

In regards to the claimed  $\gamma/\gamma'$  eutectoid area percentage and the claimed carbide area percentage, the Examiner asserts that the alloys would inherently have the claimed eutectoid area percentage and the claimed carbide percentage because the alloys have substantially the same composition and the substantially the same processing. See MPEP 2112.01 I. In addition, Meetham et al. ('542) teach that boron and zirconium would be added thereby depressing the melting point, which allows for the temperature of the heat treatment to rise. Increasing

the temperature of the heat treatment to the degree to which the  $\gamma'$  phase in solution is increased (indirectly impacting the quantity of  $\gamma$  phase) results in an increase in the stress-rupture life. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the amount of  $\gamma'$  phase in order to achieve a desired stress-rupture life because the  $\gamma'$  phase would be a result-effective variable in achieving a desired stress-rupture life, as disclosed by Meetham et al. ('542) (col. 3, line 61 – col. 4, line 2). See MPEP 2144.05 II.

Still regarding claim 1, Meetham et al. ('542) teach that the presence of carbon in low levels gives rise to fine carbide particles which thereby affect the life of the alloy. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the carbide levels within the alloy in order to achieve a desired alloy life because carbide levels would be a result-effective variable in achieving a desired alloy life, as disclosed by Meetham et al. ('542). See MPEP 2144.05 II.

With respect to the formula in claim 1, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those of ordinary skill in the art. *In re Austin*, et

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al., 149 USPQ 685, 688. It would have been obvious to one of ordinary skill in the art to select the desired amounts of carbon, chromium, aluminum, cobalt, tungsten, tantalum, titanium, zirconium, and boron from the ranges disclosed by Meetham et al ('160 ) because Meetham et al ('160 ) disclose the same utility (heat resistant nickel-based alloys) throughout the disclosed ranges.

In regards to claim 2, the phrase "up to" indicates that the presence of that particular element would not be non-essential. In this case magnesium, calcium and rare earth metals would all be elements non-essential to the nickel-based alloy composition according to claim 2.

In regards to claim 3, Meetham et al. ('160) disclose 0-1.5 weight percent vanadium and 0-3.5 weight percent molybdenum which overlaps the 0-1.0 weight percent vanadium and 0-1.0 weight percent limitations. Meetham et al. ('160) do not specify that the alloy contains more than the prescribed upper limits of iron, copper, phosphorus or sulfur. Therefore, Meetham et al. ('160) inherently satisfies these limitations.

In regards to claim 4, see the rejections of claims 2-3.

In regards to claims 5-8, Meetham et al. ('160) disclose a nickel-base heat resistant alloy. Meetham et al. ('160) also specify wherein the alloy would be used for the hotter parts of a gas turbine engine (col. 1, lines 9-21). The Examiner asserts that a turbine wheel would be within the scope of the hotter parts of a gas turbine engine Therefore, it would have been obvious to one of

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ordinary skill in the art at the time the invention was made to use the nickel-based alloy of Meetham et al. ('160) in as a wheel for an automobile (gas) turbine engine with expected success.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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